

Danish Army Command and Control Information System

An Operational View of the Problems In Data Exchange in the Army Mobile Environment

Major Erling Rasmussen
Danish Army

UNCLASSIFIED - APPROVED FOR PUBLIC RELEASE

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 01 DEC 2007		2. REPORT TYPE N/A		3. DATES COVERED	
4. TITLE AND SUBTITLE An Operational View of the Problems In Data Exchange in the Army Mobile Environment				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Danish Army Command and Control Information System & ACOS/CCIS-Section/Danish Division				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 37	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



THE SPEAKER

Erling J. Rasmussen
major
Operational Project Officer
Danish Army Command and Control
Information System
&
ACOS/CCIS-Section/Danish Division

E-mail: daccis-ddiv@mail.sonofon.dk

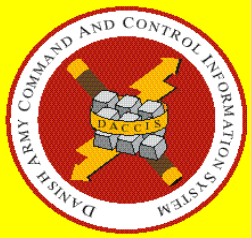


"Giving bad commanders more information does not make them good. They just make bad decisions faster, or get so overwhelmed that they can't make any decision"

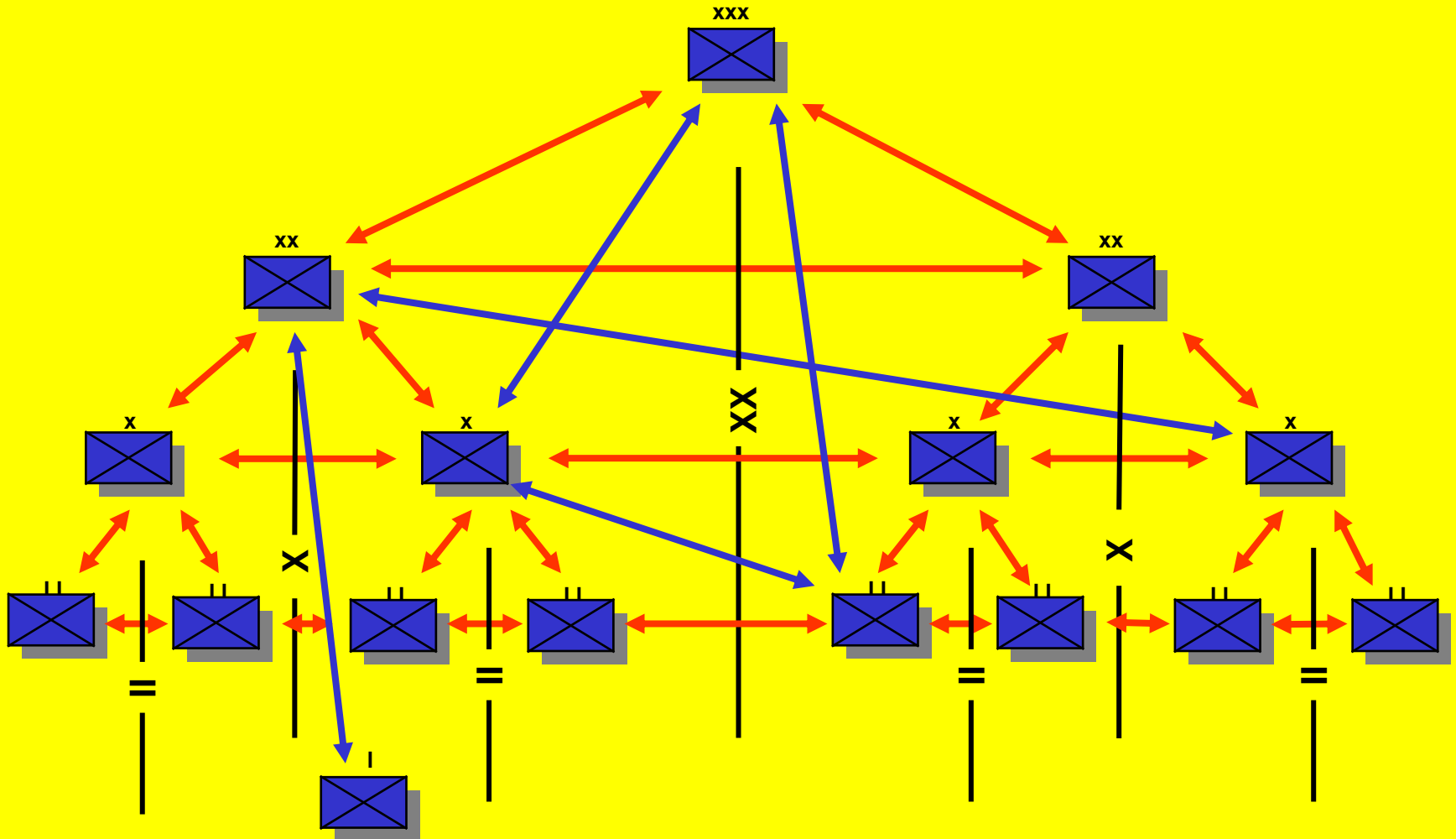


C2 PURPOSE

- **To reduce time consumption**
- **To improve the basis for decisions.**
- **To improve exchange of information.**
- **To improve handling of information.**
- **To modernise the presentation of information**
- **To improve and extend the use of computer assisted exercises (CAX).**



INFORMATION EXCHANGE



WHAT TO HANDLE?

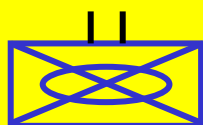
UNCLASSIFIED – APPROVED FOR PUBLIC RELEASE



WHAT TO HANDLE? (INVESTIGATIONS)

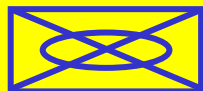


G2: (Good old Warsaw Pact scenario)



X

50 – 75 Informations/Hour



100 – 125 Informations/Hour

XX



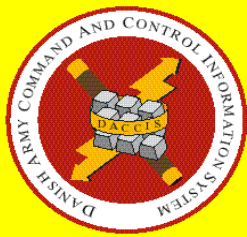
150 – 175 Informations/Hour

Division and sub units:

116.000 full filled pieces of A4 papers/24 Hour

Division (SE Investigation):

70.000 Updates per 24 Hours



WHAT TO HANDLE?

PLANS & ORDERS:

- 5 Operational Plans
Incl. Orders (STANAG 2014), Task Organisation,
Request's

EXECUTION/CURRENT SITUATION:

- Exchange Information between min. 20 units
- Continuous exchange of information on unit positions, activities, holdings, geometri (boundaries, phase-lines etc.)for four parties (own, enemy, unknown, neutral)
- Min. 200 exchanges per server per hour.
- Request's



WHAT TO HANDLE? (Cont.)

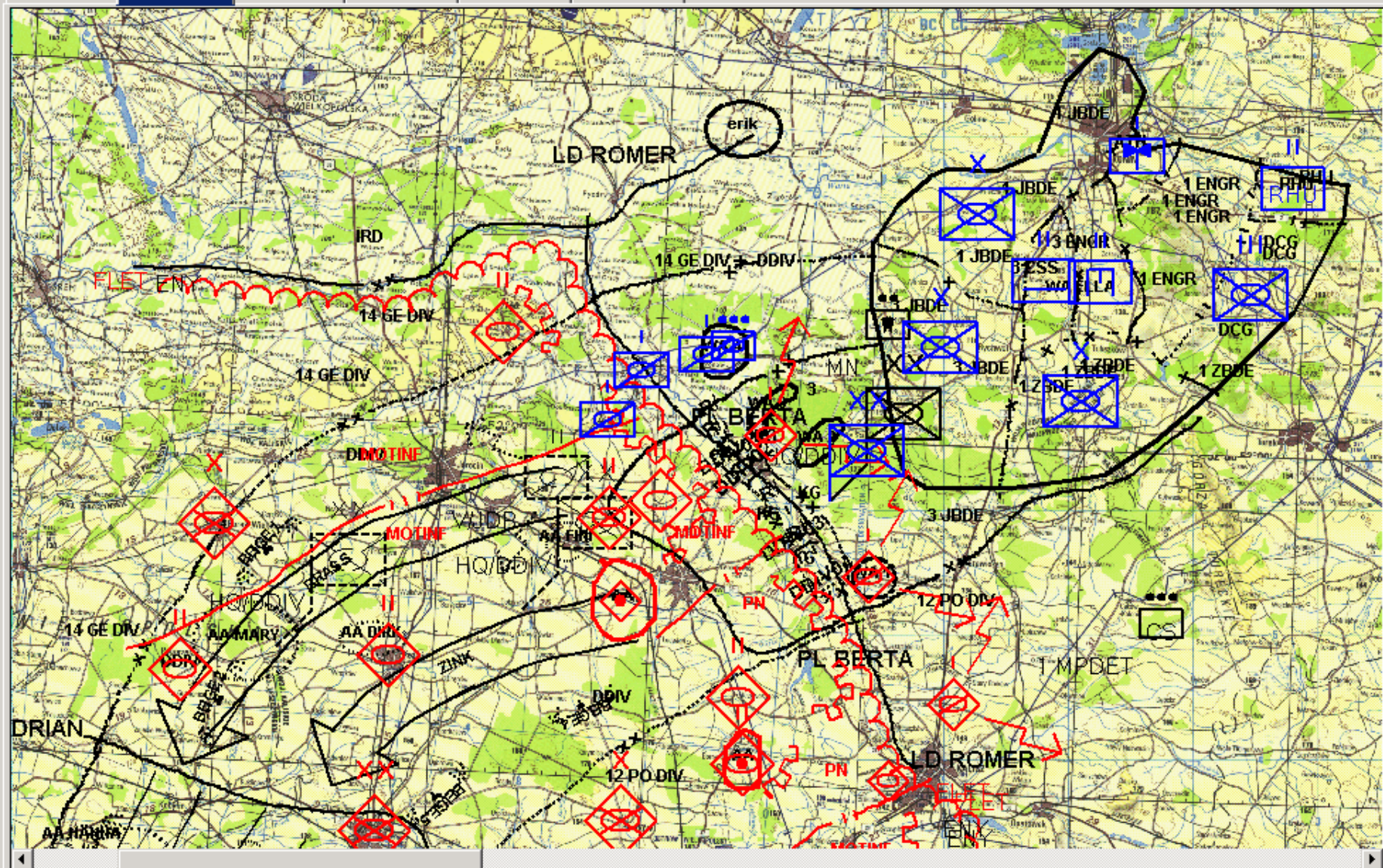
BASIC INFORMATION:

- **Exchange of information on organisation, incl. Materiel, holdings and personel.**



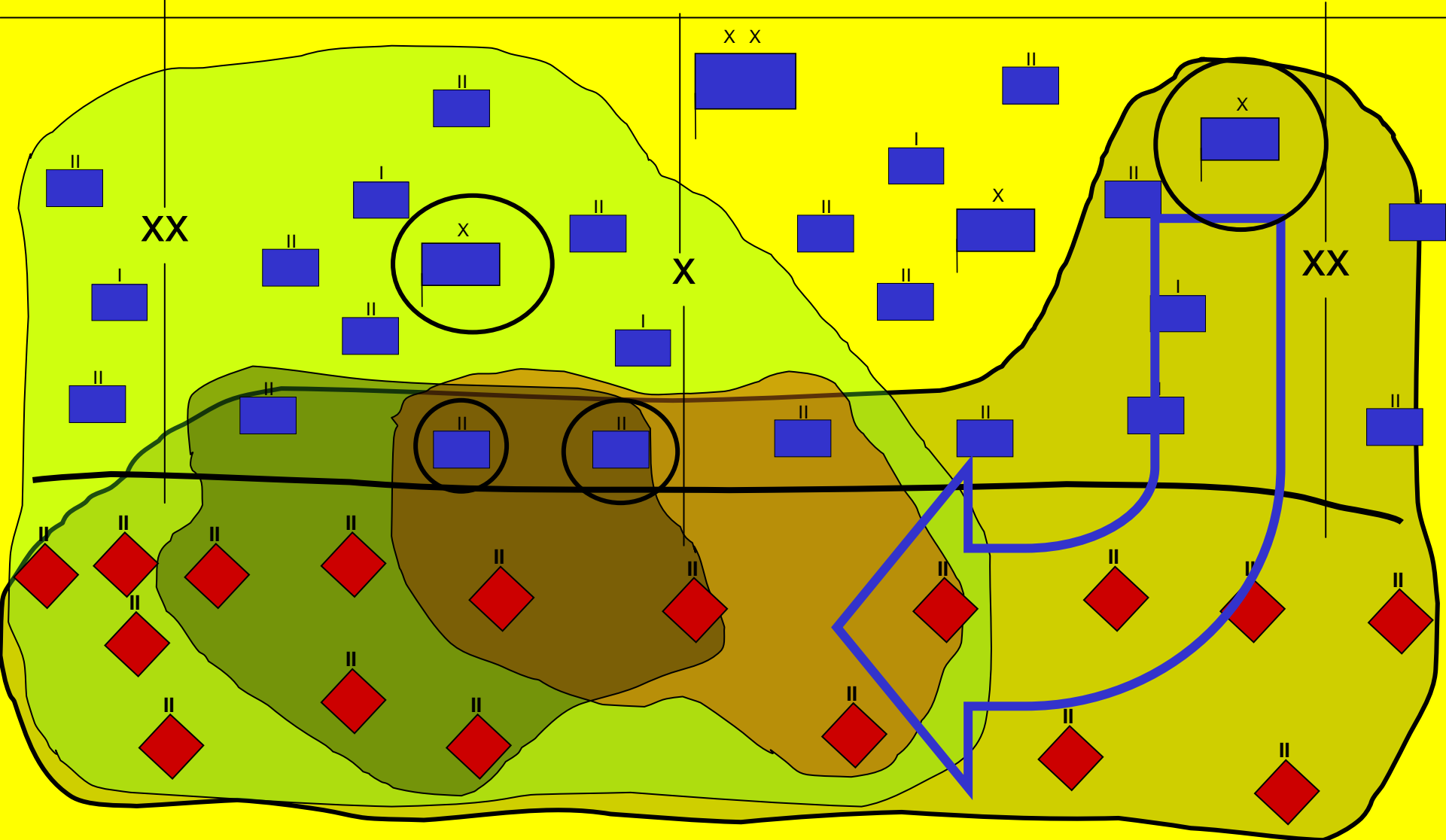
34U BC 3795 5844 WGS1984 UTM34N X-TEST - Not started

Scale: 1:321312

G3 ☒ G3 Sit ☒ G2 Sit ☒ G3 Arty ☐ G3 Engr ☒ G4 ☐



AREA OF INTEREST (WARFIGHTING)





COMMON OPERATIONAL PICTURE

***WHO IS DECIDING WHICH INFORMATION
THE COMMON OPERATIONAL PICTURE
INCLUDES ?***

- ONLY THE COMMANDER'S INVOLVED!



AREA OF INTEREST (PEACE SUPPORT OPERATIONS)

**CAN OTHER THAN THE LOCAL
COMMANDER'S DEFINE THE
AREA OF INTEREST OR
THE COMMON OPERATIONAL
PICTURE?**

PROBLEMS!

UNCLASSIFIED – APPROVED FOR PUBLIC RELEASE

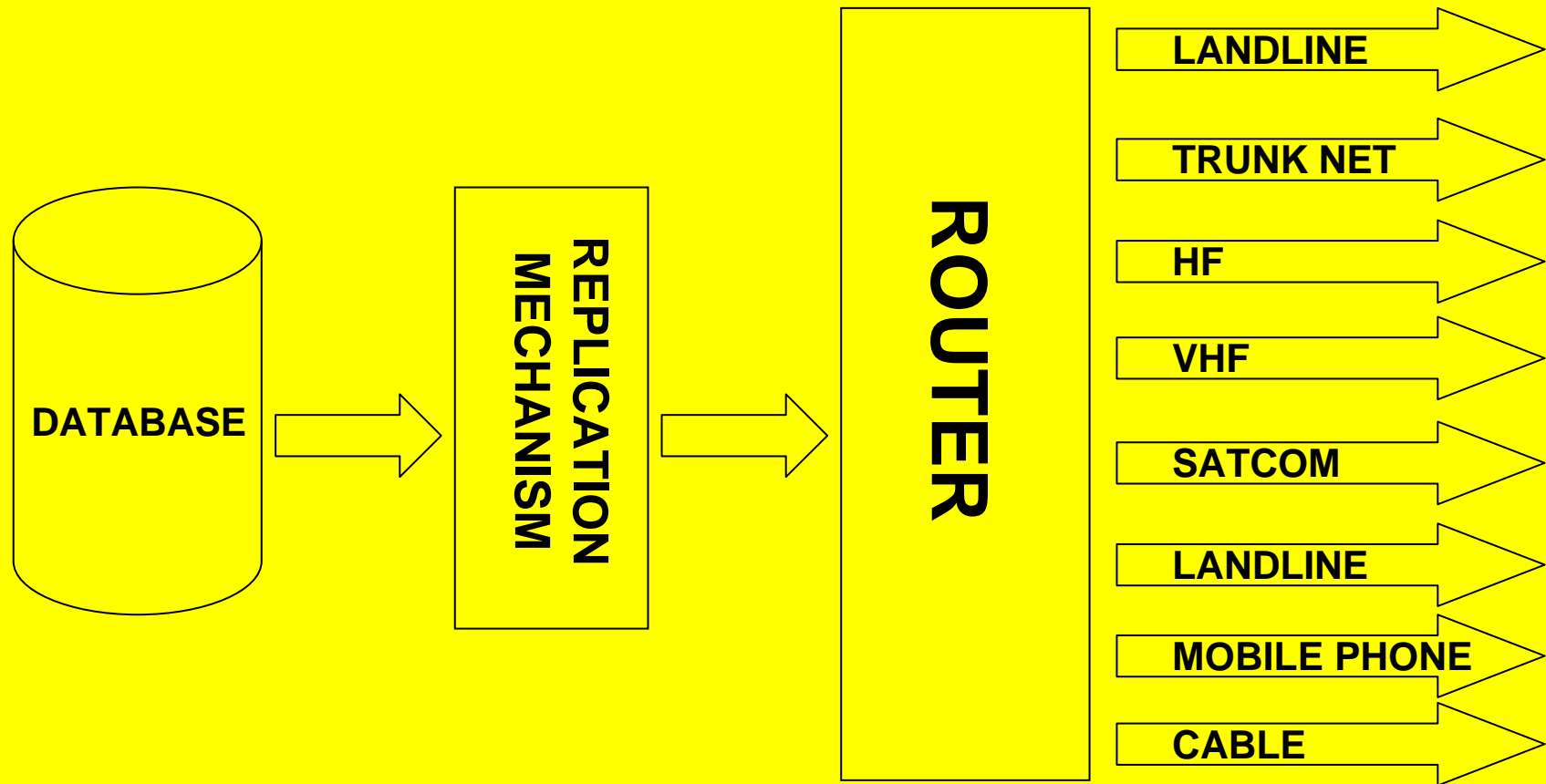


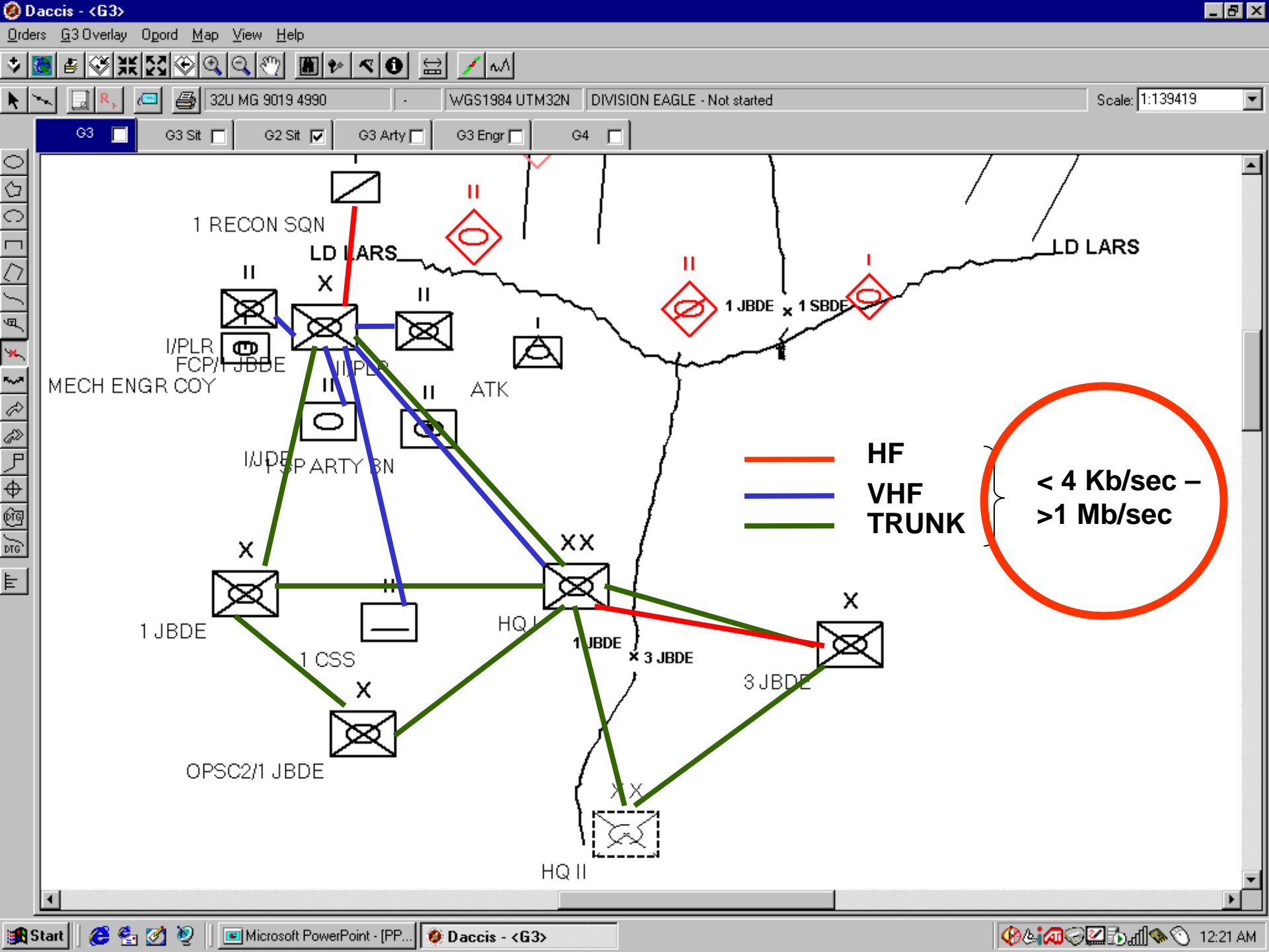
COMMUNICATIONS





COMMUNICATION







REPORTS

DID YOU KNOW THAT... The following messages have support for automatic processing, updating and generation:

Land:

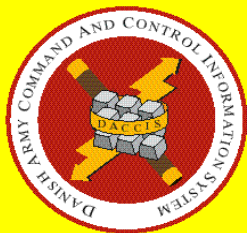
JUNIT
OPSITREP
EOPSITREP
PERSREP
OWNSITREP
ENSITREP

Naval:

GOLD
XCTC
NAVSITREP
NAVSITSUM
MARINTREP
MARINTSUM
UNSTATREP
NAVACTREQ
NAVACTSUM
OPSTATREP

Joint:

ASSESSREP
LOGASSESSREP
CISSITREP
PSOSITREP
MEDASSESREP
MEDSITREP



MIP MTF ORGLOCAT

ORGLOCAT.irs - WordPad

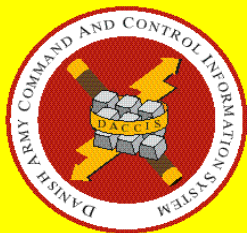
File Edit View Insert Format Help

EXER/MIP LOT//
MSGID/ORGLOCAT/-/-/-/-/-//
SEG4/-//
RPTD/202000000000010002/REP/YES/-/TRSTED/36580/43200/RDABST/-
/202000000010001/20200010001/0//
RPTDAT/202000000000010002/0/36580/43200/HR/20200010001/0//
OBJIS/202000000010008/202000001001/OR/FR/202000000000010002
/20200010001/0//
ORGSTAT/202000000010008/202000001001/OPR/NKN/-/NORM/NO/ INACT
/20200010001/0//
SEG9/-//
LOCAT/202000000040008/PT/20200010001/0//
POINT/202000000040008/ABS/100M/100M/20200010001/0//
ABSPPOINT/202000000040008/LOC/31.116230/-97.904070/20200010001/0//
RPTD/202000000000010003/REP/YES/-/TRSTED/36580/43200/RDABST/-
/202000000010001/20200010001/0//
RPTDAT/202000000000010003/0/36580/43200/HR/20200010001/0//
ORGPOINT/202000000010008/202000000040008/202000001001/-/-/-
/202000000000010003/20200010001/0//

900 b

For Help, press F1

NUM

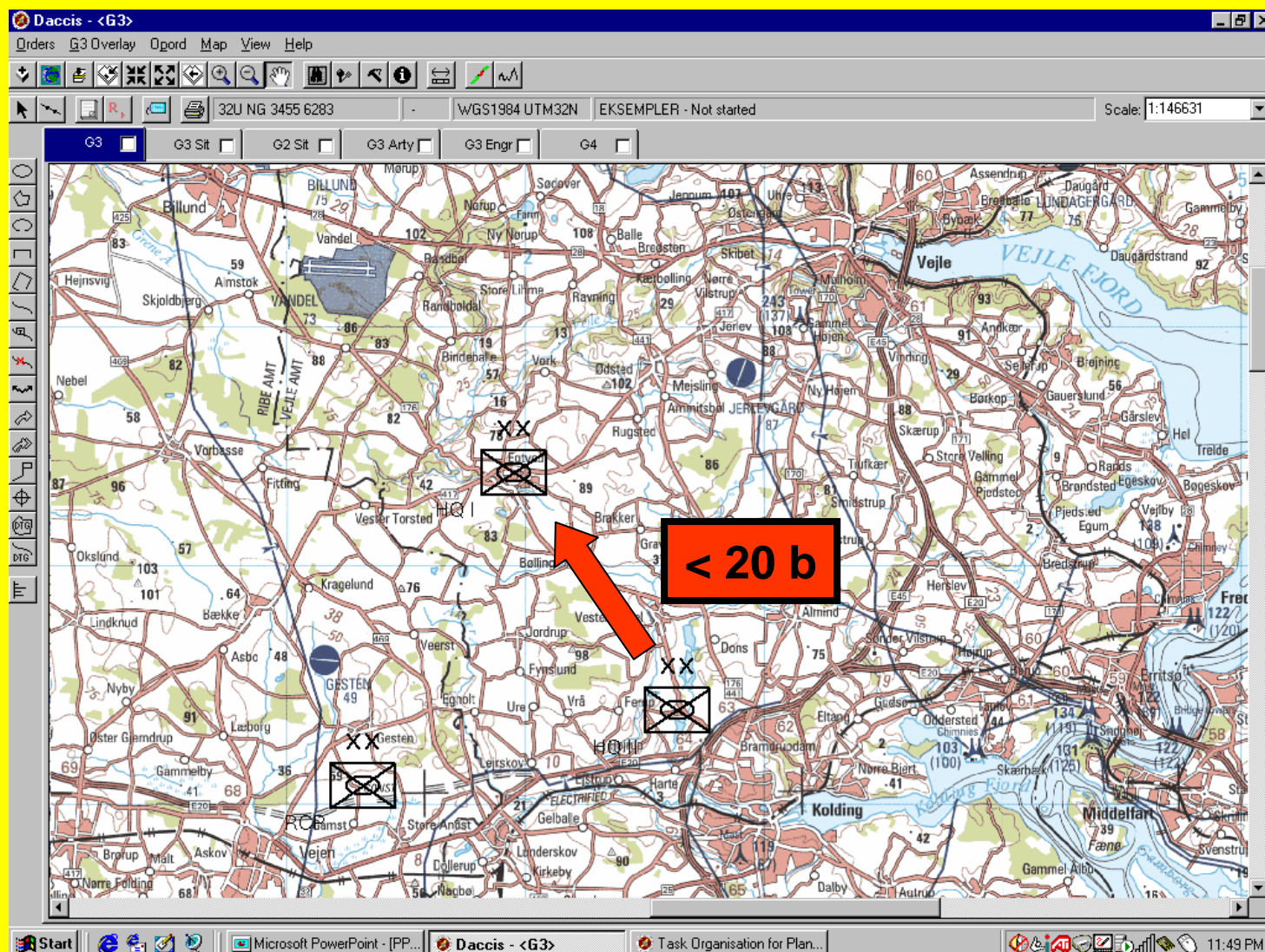


UNCLASSIFIED - APPROVED FOR PUBLIC RELEASE



DACCIS

Database to Database Exchange





THE BATTLE OF BANDWIDTH

TO DAY:

CCIS

TO MORROW:

- ARTILLERY
- AIR DEFENCE
- ENGINEER
- CIMIC
- LOGISTICKS
- COMMS
- NGO'S
- POLICE
- ETC.



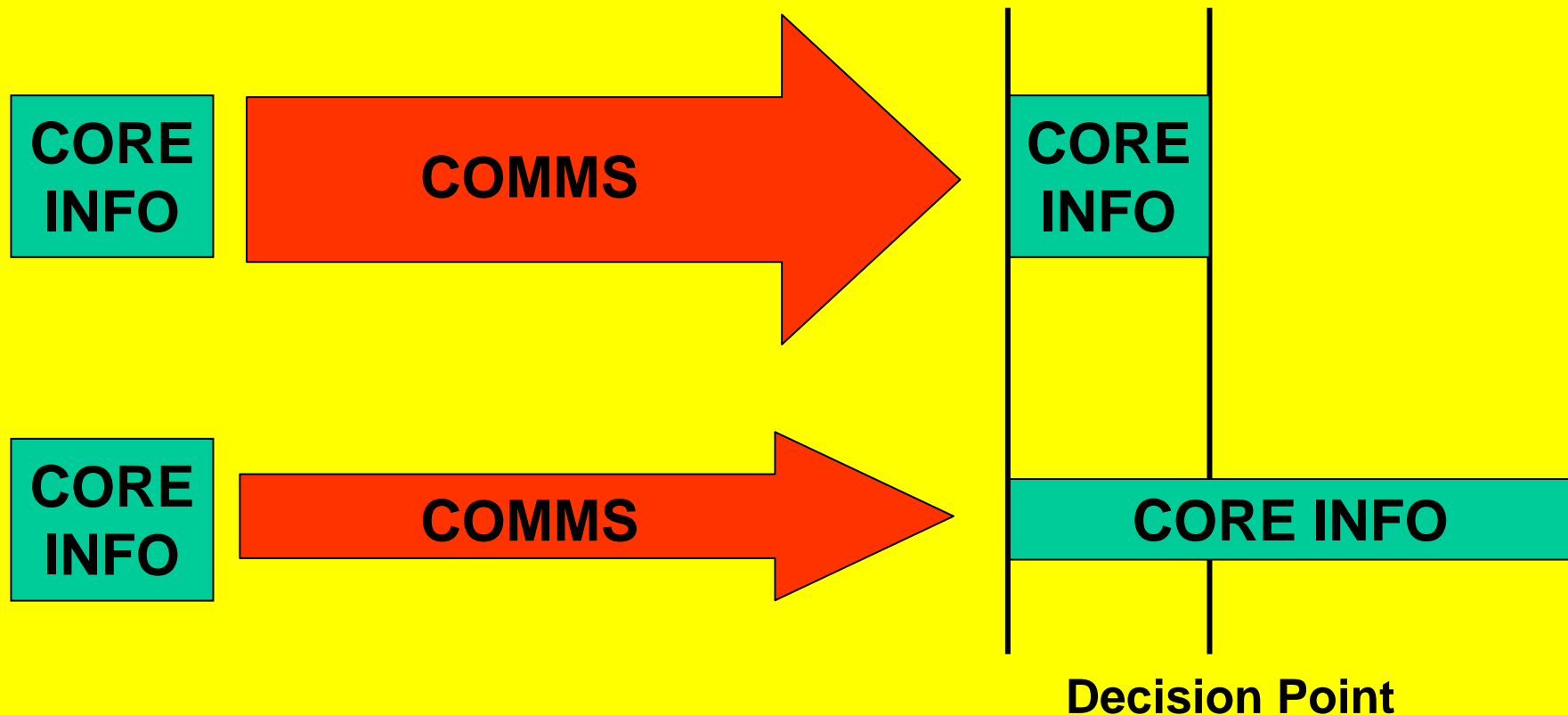
BANDWIDTH IS A PROBLEM!



THE PROBLEM

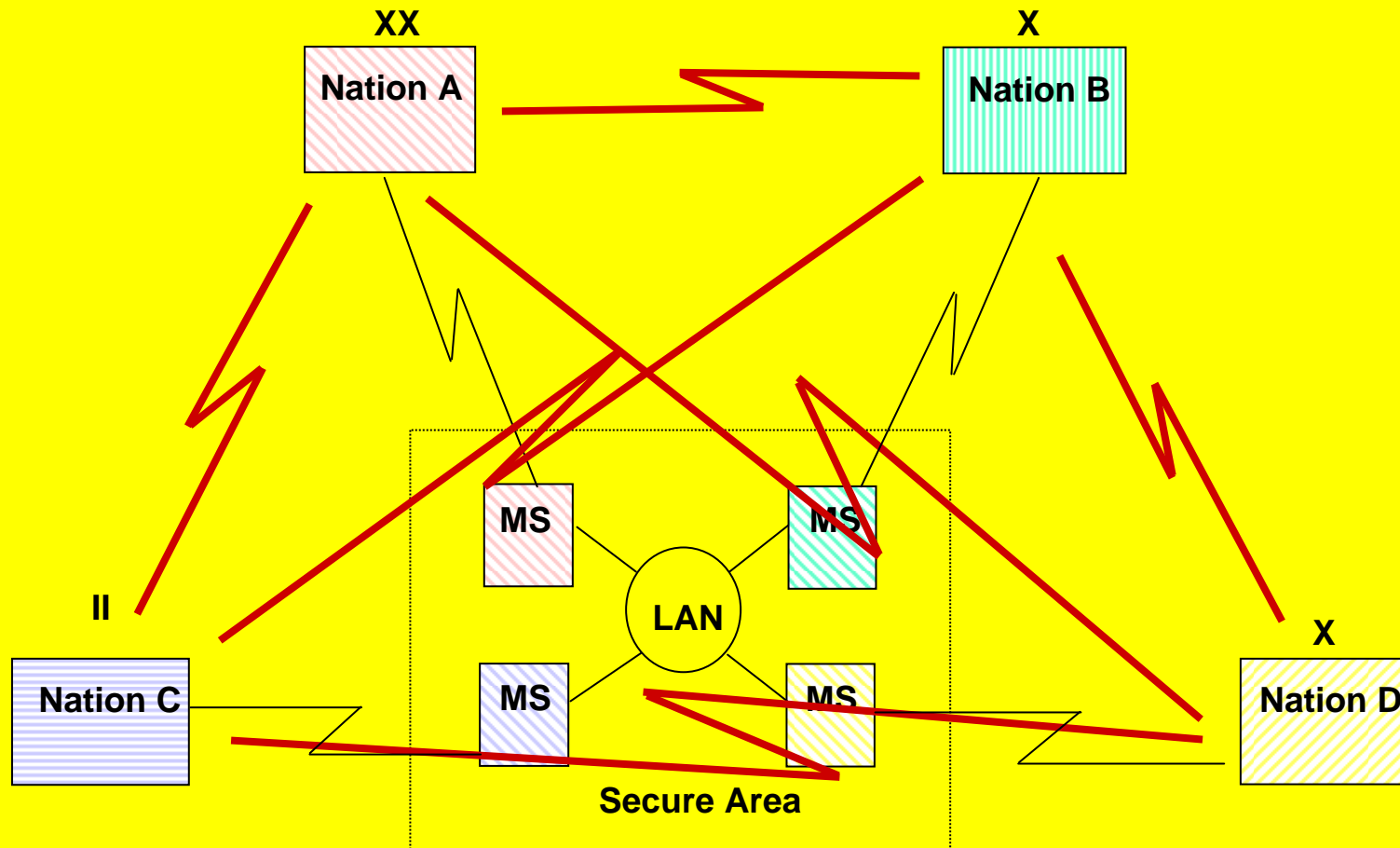
PROVIDER

RECIEVER





A POSSIBLE ~~NEW~~ SOLUTION



**DIRECT DATABASE TO DATABASE
CONTROLLED UPDATES**



OPERATIONAL DOMAIN'S

- Planning
- Execution/Situation
- Reference data



FUNCTIONAL AREA'S

(An example)

- 1: Manoeuvre**
- 2: Intelligence**
- 3: Fire Support**
- 4: Logistic**
- 5: Mobility/Counter mobility**
- 6: Survivability/Protection**
- 7: Air Defense**
- 8: Command and Control**
- 9: CIMIC**



THE CORE MILITARY INFORMATION *MUST BE DIVIDED*

PROVIDER

1	2	3
4	5	6
7	8	9

1	2	3
4	5	6
7	8	9

1	2	3
4	5	6
7	8	9

**COMMANDER'S
DECISION**

COMMS

COMMS

COMMS

RECEIVER

1	2	3
4	5	6
7	8	9

2	3	8
4	6	7

2	4	7
---	---	---

1 = FUNCTIONAL AREA



COMMANDER'S
DECISION

**THE CORE MILITARY INFORMATION
MUST BE DIVIDED (2)**

PROVIDER

RECEIVER

1	2	3
4	5	6
7	8	9

COMMS

1	2	3
4	5	6
7	8	9

1	2	3
4	5	6
7	8	9

COMMS

1	2	3
4	5	6
7	8	9

1	2	3
4	5	6
7	8	9

COMMS

1	2	3
4	5	6
7	8	9

1	2	3
4	5	6
7	8	9

COMMS

1	2	3
4	5	6
7	8	9



DYNAMIC CONTRACTING

(ATCCIS WP 18-2)

STEP 1

Main Catagory

Planning
Execution/Situation
Reference data

Functional Areas Main Template

- Manoeuvre
- Intelligence
- Fire Support
- Logistic
- Mobility/
Counter mobility
- Survivability
/Protection
- Air Defense
- Command and
Control
- CIMIC

STEP 2

Functional Areas Sub Template

Reports

Assessments

Intelligence
Collection
Plan

Logistic G1

Logistic G4

STEP 3

Filters

AOI
Time
Orbat
HostilityAOI
Time
Orbat
Hostility

(ATCCIS WP 31-1)



REQUEST/RESPONSE

Intelligence Collection Plan

Entry(s) Settings Intelligence Report/Assessment Information Point

Current entries Old entries

	Serial Number	Intelligence Requirements	Information Requirements	Indicators	Requestor	RISTA system	Time/Place Form of Report	Remarks	Priority	ICP Overlay
	3	Traffic	Investigate	Adopt	1 JBDE	14 ADM BN	161431Z AUG 2003	Construction	4	SIT
	4	Bridge in town	Ask	Reject	DDIV	1 ZBDE	171431Z AUG 2002	No remarks	3	SIT
	5	Traffic over bridge	Search	Adopt	1 JBDE	2 MP COY	181431Z AUG 2003	People	5	Plan - Great V
IR	6	Artillery in Sæby	Find	Reject	1 JBDE	3 SIG BN	191431Z AUG 2003	Population	3	Plan - Fat Go
	7	Bridge in forrest	Investigate	Adopt	DDIV	1 JBDE	301431Z AUG 2003	Construction	2	SIT
	8									

Print Ok Cancel Help



REQUEST/RESPONSE (Cont.)

Intelligence Collection Plan

Entry(s) Settings Intelligence Report/Assessment Information Point

Current entries Old entries

	Indicators	Requestor	RISTA system	Time/Place Form of Report	Remarks	Priority	ICP Overlay	Status	Result
IR	Adopt	DDIV	3 JBDE	141431Z AUG 2003	Possibly bad weather	1	SIT	Aborted	UAV shot down
IR	Reject	Corps	DDIV	151431Z AUG 2003	No remarks	1	SIT	Complete	Enemy spotted
	Adopt	1 JBDE	14 ADM BN	161431Z AUG 2003	Construction	4	SIT	In progress	5 pictures taken
	Reject	DDIV	1 ZBDE	171431Z AUG 2002	No remarks	3	SIT	Cancelled	Enemy surrendered
	Adopt	1 JBDE	2 MP COY	181431Z AUG 2003	People	5	Plan - Great Warrior	Not started	Lot of casualties
IR	Reject	1 JBDE	3 SIG BN	191431Z AUG 2003	Population	3	Plan - Fat Goose	Not known	Nothing to report
	Adopt	DDIV	1 JBDE	201431Z AUG 2003	Construction	2	SIT	Not started	

Print Ok Cancel Help

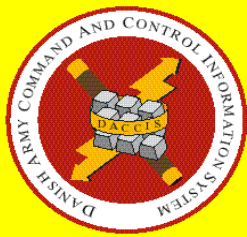
Color code:

Red – New ICP entries, which have not been “accepted” by the actor.

Green – The ICP entry is completed.

Blue – The specified time of completion for the ICP entry has passed.

Black – All other situations.



ADVANTAGES

- **SUPPORTS DOCTRINE**
- **SUPPORTS CHANGE IN DOCTRINE**
- **SUPPORTS COMMANDERS EXACT NEEDS**
- **SUPPORTS Adat-P3/MTF/USMTF**
- **SUPPORTS CHANGE OF MISSION**
- **SUPPORTS PRIORITISING OF DATA**
- **COUNTERACT INFORMATION OVERLOAD**
- **SUPPORTS CHANGING OF UNIT COMPOSITION**



ADVANTAGES (2)

- **SUPPORTS SECURITY**
- **SUPPORTS CHANGE IN ORGANISATIONAL STRUCTURES**
- **SUPPORTS CHANGE OF OPERATION TYPE (CONFLICT SPECTRUM)**
- **SUPPORTS DATA FLOW CONTROL (SAVING BANDWIDTH)**
- **SUPPORTS OPERATIONS "ON THE MOVE"**
- **CHANGE OF HQ LOCATIONS**



MULTILATERAL INTEROPERABILITY PROGRAM

19





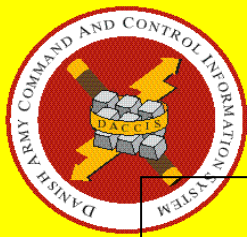
5 Reasons Not to Worry About The Information Exchange Problem



1. There is too much data already – soldiers can't handle it.
2. Bandwidth is not a problem (It's just a modulation problem).
3. High speed radios will soon permeate the battle field.
4. Nothing will ever replace USMTF/MTF/AdatP-3.
5. Industry will fix this problem.

Sam Chamberlain, Ph.D.

US Army Research Laboratory
Computational & Information Sciences Directorate
Computer & Communication Sciences Division

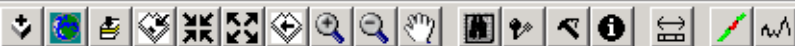


?



The Legion





32U NG 0127 7793 WGS1984 UTM32N 1 BLACK HUSAR - Not started

Scale: 1:187026

G3

G3 Sit

G2 Sit

G3 Arty

G3 Engr

G4

Danish Army Command and Control Information System



QUESTIONS - SO FAR?

